

Symposium

Introduction: Envisioning Legal and Policy Pathways for Energy Innovation

Hari M. Osofsky*

It is my pleasure to introduce this special issue of the *Minnesota Journal of Law, Science & Technology*, which emerged from the conference *Legal and Policy Pathways for Energy Innovation* organized by the Consortium on Law and Values in Health, Environment & the Life Sciences at the University of Minnesota on April 24–25, 2013. This conference brought together leading scholars, practitioners, policymakers, and business people to discuss how to make critical progress on energy law and policy.¹ This issue contains contributions from several conference participants, which do a wonderful job of highlighting the complexity of energy transition and possibilities for creative, practical solutions to help us get there.

The conference focused specifically on finding solutions to four core challenges in energy transition. First, we do not have the legal, institutional, or physical infrastructure to transition

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* Professor, University of Minnesota Law School; 2013–14 Fesler-Lampert Chair in Urban and Regional Affairs; Director, Joint Degree Program in Law, Science & Technology; Faculty Member, Conservation Biology Graduate Program; Adjunct Professor, Department of Geography, Environment and Society; and Fellow, Institute on the Environment. I am grateful to the many faculty and staff who made possible the 2014 Consortium on Law and Values in Health, Environment, and the Life Sciences Conference. I also appreciate the excellent editorial work of the Minnesota Journal of Law, Science & Technology staff and the important efforts of Steven Kranz. As always, I am grateful for the love, support, and patience of Josh, Oz, and Scarlet Gitelson.

1. For the conference agenda, see *Agenda and Videos*, U. MINN., CONSORTIUM ON L. & VALUES HEALTH, ENV'T & LIFE SCI., <http://consortium.umn.edu/lecturesconferences/conferences/lppei/agenda/home.html> (last visited Dec. 20, 2013).

to cleaner energy sources. Second, we do not have effective governance strategies for complex, multi-level problems that predominate at the intersection of environmental and energy law. Third, the relevant law results in low-income communities of color disproportionately bearing the environmental burdens of our energy and other industries without reaping the benefits of clean, low-cost energy or open space. Fourth, many U.S. metropolitan areas lack effective regional approaches to land-use, power, and transportation and suffer from dysfunctional dynamics between core cities and their suburbs and exurbs.

The pieces in this symposium issue exemplify the important thinking along these themes that took place at the conference, as well as the intertwined nature of many of these challenges. Energy transition occurs at multiple scales—from the international to the local—and involves a complex mix of public and private stakeholders.² The articles focus on these multi-level dynamics in a variety of contexts, and explore innovative, interdisciplinary legal strategies.

At the largest scale, part of addressing energy transition involves national-level initiatives connected to international negotiations. Jacqueline Peel's *The Australian Carbon Pricing Mechanism: Promise and Pitfalls on the Pathway to a Clean Energy Future* analyzes the benefits and limitations of that country's experiment with a national legislative approach to climate change.³ It highlights four key lessons from the Australian experience, which focus on establishing the right carbon price, designing assistance and compensation measures, insulating the scheme from politics, and creating a regulatory mix of policies in which a carbon price is only one element.⁴

While national-level legislation can play an important role in energy transition, because of federalism's division of powers, achieving overall national-level change in the United States often requires the accumulation of state action. At times,

2. For an exploration of the complex multi-level governance issues involved in multiple areas of energy transition, see Hari M. Osofsky & Hannah J. Wiseman, *Dynamic Energy Federalism* 72 MARYLAND L. REV. 773 (2013); Hari M. Osofsky & Hannah J. Wiseman, *Hybrid Energy Governance*, ILL. L. REV. (forthcoming 2014).

3. Jacqueline Peel, *The Australian Carbon Pricing Mechanism: Promise and Pitfalls on the Pathway to a Clean Energy Future*, 15 MINN. J. L. SCI. & TECH 429 (2014).

4. *Id.*

though, neither level moves energy law and policy forward adequately due to limitations of or challenges to governance authority. In *The Fifth Dimension: Legal Infrastructure, Cracks, and Governance*, Steven Ferrey brings together many of the conference themes by exploring “five dimensions” of state and federal power over sustainable energy policy and the difficulties that have arisen due to the application of the Dormant Commerce Clause to state efforts.⁵ He argues that “we do have a multidimensional state legal infrastructure . . . but it is being challenged as unconstitutional or otherwise illegal.”⁶ He also shows how these U.S. energy federalism disputes connect to climate change and the pledges made at international negotiations.⁷

The Dormant Commerce Clause litigation is not the only area in which federal and state law interact over critical transitional questions. Two of the articles explore how the need for renewable energy development can be reconciled more appropriately with ecosystem protection and the federal-level Endangered Species Act. *Mitigating the Impacts of the Renewable Energy Gold Rush* by Amy Wilson Morris and Jessica Owley analyzes the difficult choices raised by emerging large-scale solar projects in desert locations, which help address fuel transition but potentially impact many species.⁸ Using two facilities as case examples, it argues for slowing down the approval process and integrating concepts of reevaluation, adaptive management, and consolidated landscape-level planning.⁹ Kalyani Robbins’ *Responsible, Renewable, and Redesigned: How the Renewable Energy Movement Can Make Peace with the Endangered Species Act* proposes another strategy in this context, examining how technology-based solutions can help ameliorate the impact of hydropower, wind energy, and solar power on species.¹⁰ It considers possibilities for limiting impacts for each of these

5. Steven Ferrey, *The Fifth Dimension: Legal Infrastructure, Cracks, and Governance*, 15 MINN. J. L. SCI. & TECH 469 (2014).

6. *Id.*

7. *Id.*

8. Amy Wilson Morris & Jessica Owley, *Mitigating the Impacts of the Renewable Energy Gold Rush*, 15 MINN. J. L. SCI. & TECH 293 (2014).

9. *Id.*

10. Kalyani Robbins, *Responsible, Renewable, and Redesigned: How the Renewable Energy Movement Can Make Peace with the Endangered Species Act*, 5 MINN. J. L. SCI. & TECH 555 (2014).

three sources, and also proposes ranking of modes of development and best paths forward.¹¹

Complicated multi-level dynamics do not simply take place between the federal government and states. Energy transition also often involves nuanced interactions between state and local governments, with variations on who is driving change and who is resisting it. Maria Petrova's *Sustainable Communities and Wind Energy Project Acceptance in Massachusetts* explores whether participation in a state-wide green communities program correlates with increased willingness to host wind energy projects.¹² Her study finds a relatively limited correlation, suggesting that familiarity with renewable energy and commitment to sustainability may not always translate at a local level into acceptance of projects.¹³

Due to state and local land use authority, another area in which state and local often intersect is in debates over how to allocate property rights relevant to energy transition. K.K. DuVivier's article *Solar Skyspace B* addresses the need to provide protection for photovoltaic solar panels that includes property rights to space above Southern neighbors' land due to the arc of the sun in the northern hemisphere.¹⁴ It describes relevant existing state and local law and argues for the need for more provisions to protect this "Solar Skyspace B."¹⁵

Finally, energy transitions that make sense for the broader economy may disproportionately affect particular people and communities. It is critical for cleaner energy strategies to take these justice issues into account and provide assistance to those facing harms. *Transitioning a Community Away from Fossil-Fuel Generation to a Green Economy: An Approach Using State Utility Commission Authority* by Alan Ramo and Deborah Behles analyzes possibilities for creative strategies to address the economic impact on communities as fossil fuel facilities are

11. *Id.*

12. Maria A. Petrova, *Sustainable Communities and Wind Energy Project Acceptance in Massachusetts*, 15 MINN. J. L. SCI. & TECH 529 (2014).

13. *Id.*

14. K.K. DuVivier, *Solar Skyspace B*, 15 MINN. J. L. SCI. & TECH 389 (2014).

15. *Id.*

retired.¹⁶ Using the Mohave Generating Station and the effect of its retirement on the Navajo and Hopi communities as an example, their article shows how public utility commissions can use their authority to play a constructive role in supporting a community's economic transition.¹⁷

Together, these articles suggest that a way forward for energy involves understanding how law, society, and technology intersect at multiple scales in different contexts. Each of the issues explored in this symposium is individually complicated. Collectively, they suggest the need for holistic thinking about energy that learns from the challenges in each area and the creative governance solutions employed or proposed. While effective and appropriate transition will not be easy, a better future demands that we explore these many pathways for legal and policy innovation and incorporate them into an overall understanding of the energy system.

16. Alan Ramo & Deborah Behles, *Transitioning a Community Away from Fossil-Fuel Generation to a Green Economy: An Approach Using State Utility Commission Authority*, 15 MINN. J. L. SCI. & TECH 505 (2014).

17. *Id.*
